Document Automation Whitepaper

https://aimultiple.com
Executive Summary

There will be a day when companies, governments and individuals no longer share pdf documents for communication. This can happen in the next 20 years and enable more seamless communication. However, until that day, businesses and governments need to process pdf documents which include credit notes, invoices, receipts, medical records and so on.

Thanks to the advances in machine learning, there are now solutions which can process most of these documents automatically. These solutions convert documents to machine readable data and automatically process them.

We have outlined their benefits and application areas. We recommend every enterprise to leverage document automation solutions to reduce operational costs and increase compliance. If you have questions, please reach out to info@aimultiple.com. We are happy to support you in identifying the most valuable document automation use cases in your company or the right vendors for you company.
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Document Automation

We are living in the era of Big Data. In fact, in 2013 IBM claimed that 90% of the world’s data had been created in the previous 2 years alone, and we continue to double the rate of data production every 2 years. Yet, according to Forrester, companies analyze only 12% of the available data. This is because most data is stuck in non-machine readable formats such as emails, video, documents etc.

Document generation and processing become significant challenges with the increasing number of transactions. By adopting automation technologies, companies can dramatically reduce manual document processing. Thus, they can reduce costs and errors while increasing compliance and employee satisfaction.
What is document automation?

There are 2 aspects of document automation:

- Automating the processing of received documents: Also referred to as document process automation, this refers to automatically collecting required data from different types of documents, approving its validity, and making use of the extracted data adding relevant features and increasing its value.
- Automated generation of documents: Enables businesses to create new documents like invoices, contracts, and order forms from the data extracted in the previous stage.

Wikipedia’s definition focuses on automated document creation:

Document automation (also known as document assembly) is the design of systems and workflows that assist in the creation of electronic documents. These include logic-based systems that use segments of pre-existing text and/or data to assemble a new document.
How does document automation work?

Extraction

Extracting data from documents depend on the type of document involved:

- **Structured documents**: Documents like excel spreadsheets include all necessary information in an organized way. Surveys and questionnaires are also similar however they can be submitted as images. In that case, document processing tools need to recognize relevant data with OCR technology and directly extract essential information.

- **Semi-structured documents**: Semi-structured documents like order forms and invoices are not bound to specified data fields. With OCR, all required information can be converted to text and using deep learning text can be transformed into structured data.

- **Unstructured documents**: Unstructured documents don’t have preset templates and can be in any form. Contracts, letters, and articles are some examples. These documents are harder to convert to structured data as there are only a few commonly agreed structured data fields in these documents. They include the signing parties, date, purpose of the document and whether certain clauses exist in the document. Using domain knowledge, OCR and deep learning algorithms companies can auto process these documents focusing on aspects of the document valued by the company.

Validation

After extracting data from documents, document processing tools check the validity and quality of source data using both companies internal policies, business rules and public data.

*Validation using internal policies*

For example, in the below image, a specific date is extracted from the invoice. The document processing software checks if the date is valid and takes further action accordingly.
Validation using business rules

Most companies do not want to process duplicate documents. For example, duplicate invoices can cause redundant payments. Document automation vendors such as Hypatos can identify duplicate documents.

Validation using external data

In some cases such as invoices, there are public guidelines on documents. For example, Hypatos can conduct automated VAT compliance checks on invoices, allowing businesses to recognize compliance risks during document processing without additional effort.

Enrichment

Enrichment refers to increasing the value of internally held data by adding related attributes from external sources. For example in the case of invoices, a manual and expensive step is to create accounting entries for the individual items in invoices. These entries can not be auto-created as different companies use different general ledger accounts while creating bookkeeping entries for similar spending. Hypatos uses
machine learning on a company’s historical documents and their general ledger entries to identify how spending is mapped to general ledger accounts. This machine learning solution automates a manual activity that is in-housed at numerous large companies.

How does automated document generation work?

Companies can generate their documents with automated tools, collecting required data, and transforming them into desired document types. As handling this process manually might be open to errors and take a long time, these tools can generate a higher number of documents in shorter periods and without any mistakes. Here is how automated document generation tools work:

Capture input data

Businesses need to determine data for documents to be generated. As an example, they need to capture order quantity, price, and customer details automatically from order management or CRM systems. Steps to capturing data from documents as follows:

1. Documents are imported to document capture software.
2. Document capture software transforms text into a readable format. To enhance the image quality, it de-skews and cleans the image.
3. The software analyzes the document, whether it passes predefined tolerance levels. If a document fails, the software will automatically forward it for manual verification and correction. For example, blurred characters or missing fields in the document might cause this situation.
4. The software reads and filters documents automatically, based on their forms, like purchase orders, bills of lading, receipts, and more. While doing that, the unstructured data in documents are converted to structured data. With machine learning algorithms, document capture tools can improve themselves for accurate classification of input documents.
5. Metadata within documents is identified, and the software makes it possible to find documents by metadata through database searches.
6. Captured and validated records are transferred to the archive. Documents can also be used in automated workflows at this level.
7. If needed, the captured data can be processed for further tasks like document generation

Choose output format

After collecting input data, companies need to choose which documents to automate. These documents can be legal contracts for legal services; invoices for retail or logistics companies or businesses even might want to generate different document types at the same time. They also determine specific templates for each document type.
**Transform data for the desired format**

Document automation tools place input data to the determined document templates. This process may require transforming input data format to a different format. For example, input data can be in image format and be transformed into text. In the end, input data will be put into predetermined spaces in the template. Here is an example for the template:

![New Client Agreement template]

SOURCE: [WEBMERGE](https://webmerge.com)

**Arrange the content**

Document automation tools check if there are any irregularities in the output. For example, address details might be too long and can’t fit in the invoice. As a solution, font size can be diminished, or the software can cut the address details after reaching the character limit.

**Generate output documents**

The documents are generated in the desired format(s) and automatically sent to related departments/customers.
Understand OCR, a fundamental tech for document extraction

Imagine you want to edit a printed document like a book, a magazine article or a printed contract. You need to spend hours to type the document from the beginning and be careful about the mistakes. Or you can use an Optical Character Recognition (OCR) tool to scan the printed document and digitize the whole text.

OCR is a great solution for converting human-to-human communication but falls short when converting more structured documents such as forms that need to be processed by machines.

Human-to-human communication is mostly in the form of free text like the one you are reading now. Such documents are called unstructured data and while they are great for human-to-human communication but they are hard for machines to understand. OCR converts the text in unstructured data into machine readable text so it can be searched and therefore more easily consumed by humans.

To make text easier for machines to understand, companies and governments developed a myriad of forms that structure text into easily recognizable labels. OCR solutions can convert those into machine readable text but that is just the first step. Machines can not act on most text as they do not understand its meaning. Modern deep learning based data capture solutions further process OCR output, converting it into key-value pairs and tables that can be acted on by machines.
What is OCR?

OCR is a specialized technology to perceive the characters of a text within the images like printed books, photos, or scanned documents. It converts text containing images into characters that can be readable by computers to edit, compute, and analyze in the future steps. Below, you can see an example of how OCR digitalizes the text in a receipt.

**SOURCE:** LEARN OPENCV

Popular use cases for OCR technology include digitizing books and other unstructured documents that enable human-human communication. For example, Google translate’s OCR enables users to read in any language:
OCR accuracy can be measured by the portion of characters in a text that the OCR tool can extract without mistakes. For example, 99% accuracy means that 990 out of 1000 characters are correctly recognized.
Why is OCR is no longer implemented stand-alone today in human-machine communication?

While OCR captures text and converts it machine-readable, it only provides unstructured characters. However, forms are designed for human-machine communication so machines can automatically act on the data they receive from humans. Thus, vendors need to process OCR results with machine learning to turn machine-readable data into machine-actionable data.

As explained, OCR is still a foundational technology and its performance is important. These are some of the impediments to its performance:

- The image can be skewed or non-oriented. In these cases, OCR might not recognize the characters because the text isn’t aligned. Thus, OCR software should be able to straighten and de-skew images.
- Colored and varying background patterns might be problematic as they can reduce text recognition. Fixed backgrounds can improve OCR performance.
- Text in glared or blurry images is hard to read for humans as well machines. Higher image quality leads to higher quality OCR output.
Which technology advancements provided today’s OCR technology?

Computer vision

With computer vision technologies, OCR first detects characters one by one. Afterward, it uses image classification to identify each character. If these two steps work successfully, OCR outputs accurate results. However, characters can sometimes be too close to each other and might not be recognized. Thus, OCR requires more than computer vision technologies.

Natural language processing (NLP)

Even though OCR identifies characters, those characters form words, sentences and paragraphs. Research in NLP has resulted in numerous algorithms that can be used to correct mistakes in character recognition using probabilistic approaches. For example, despite missing characters can be estimated using context.

Supervised deep learning

OCR leverages deep learning algorithms to improve its performance. While it requires learning from training samples to improve OCR performance, with this technology, OCR tools can:

- Recognize characters with different fonts. Each character can be written in a wide range of forms, and large labeled data set help OCR software identify the characters despite font variations
- Detect errors and correct them. OCR tools can skip characters that cannot be identified. By recognizing patterns in training samples, OCR can detect those errors and correct its mistakes.
What are the limitations of OCR tools?

**OCR is not a stand-alone solution in human-machine communication**

The main problem with OCR is that it only outputs unstructured characters. This necessitates the combination of other machine learning technologies into OCR. By that, users can reach structured data from their documents.

**There are still no OCR tools that work at human level in most applications**

Errors include misreading letters, skipping over unreadable letters, or combining text from adjacent columns or image captions. While many factors affect the performance of OCR tools, the number of errors depends on the quality and form of the text, including the font used. However, even with high-quality documents, OCR tools can make mistakes because there are a variety of document formats, fonts, and styles for each character. The limitations that prevent OCR tools from reaching 100% accuracy can be listed as follows:

**Document-based Limitations**

- Colored backgrounds: Colorful background patterns can be troublesome because they can decrease text recognition.
- Blurry or glared texts: Blurry or glared images are challenging to read for humans as well as computers.
- Skewed or non-oriented documents: For situations where the image may be skewed, OCR will have a harder time to identify the characters because text is not aligned.

**Text-based Limitations**

- Variety of letters: Letter forms in some alphabets are harder to recognize. For example, as even the printed Arabic characters are in the cursive form, character recognition becomes a challenge. In the below image, you can see how Google Cloud Vision API makes mistakes in recognizing Arabic Letters.
Variety of font types & sizes: While it is hard to recognize all different font types, too small/big characters are also tricky to identify.

Look-alike characters: Some characters look so similar that OCR tools may not distinguish between them. For example, it is hard to differentiate between the number “0” and the letter “O”.

Handwritten text: As everyone has their way to write characters, OCR tools might not recognize all characters with different styles. You can see some characters are recognized with mistakes in the below image.
Active research to surpass these limitations

Since it was first introduced, OCR has evolved and it is used in almost every major industry now. As it still has areas to be improved, research in OCR has continued. Advances in computer vision and deep learning algorithms contribute to the increased accuracy of this technology. Right now, OCR tools can reach beyond 99% accuracy in typewritten texts. However, higher accuracy levels are desired as companies still make use of human intervention to check for potential errors. The current focus of research in OCR technology is mostly on handwriting recognition and cursive text recognition.

Handwriting Recognition

The research on handwriting recognition also leverages the dynamic motion created during the handwriting process to identify characters. While the main problem with handwriting recognition is the variety of character styles, OCR accuracy in this area is constantly but slowly improving.

Cursive Text Recognition

The joined letters are clearly harder to recognize than printed texts. This situation brings more errors in OCR tools, and these shapes of the letters do not provide enough information to allow the software to perceive them correctly.
Benefits of document automation

Reduced cost

By automating document generation and processing, businesses reduce their expenses as documents will be digitized. As a result, these funds can be used for more essential parts of companies. Considering Fortune 500 processes a few millions of documents manually per year, adopting the latest automation technologies might result in savings of tens of millions of dollars per year.

Document automation also provides faster document generation and processing. As the number of transactions expands every year, businesses can save a significant amount of time by integrating automation tools. This enables companies to save time to handle these processes.

Reduced errors

Manual document generation processes are prone to human errors, which might cause delays and increase workload in businesses. Document automation reduces these errors and notifies employees if there is missing required information.

Standardized templates

With manual processes, humans can generate varying styles of documents confusing suppliers and customers. Document automation can provide standardized templates and structures for documents without the need for further in the layouts and formatting.

Increased productivity

Document generation is a repetitive and low-skill task for employees. Document automation allows employees to focus on their primary responsibilities and improve their productivity levels.

Improved privacy and security
Document automation also protects your documents from unintended parties. Businesses can add passwords in confidential documents to ensure data security and prevent leaks.

**Improved employee satisfaction**

While companies will face a fourfold increase in the volume of incoming business information by 2021, according to a recent study by AIIM, manual data capture is a tiresome activity for employees. While this routine does not require any high-level expertise, it also demotivates workers. Document capture tools will save workers from this demotivating role and allow them to focus on their fundamental duties. This also increases their productivity by reducing distractions.

**Better decision making**

Document capture tools help users to retrieve useful information contained within unstructured data sources and transfer them to databases. Businesses can use captured data to make accurate analyses for better data-driven decision making.
Documents that businesses can automate

Finance operations

*Invoices*

Invoice automation is critical for fundamental business processes, including accounts payable, accounting, and VAT compliance. With the help of automation tools, companies can reduce their invoicing costs and errors and handle related business functions in a shorter time.

*Bill of lading*

According to Wikipedia, “A bill of lading (sometimes abbreviated as B/L or BOL) is a document issued by a carrier (or their agent) to acknowledge receipt of cargo for shipment.”. Bill of lading is an important document for companies that deal with cross-border supply chains.

*Offers*

Offers clarify the terms of an offer to a potential customer. If the customer approves the offer, it can be included in their purchase order as well.

*Order forms/purchase orders /POs*

Sales, order management, supply chain management, and logistics teams can benefit from automated order form processing and generation.

HR operations

*Receipts*

HR units are responsible for paying for employees’ business related spending. Automated receipt processing simplifies a company’s travel & expenses management process.

*Payslips*

HR units need to prepare payslips for their employees. Automated payslip processing and generation can also be integrated into loan application processes in the banking and finance industries.

Healthcare

*Medical records*
They are used for communication between different healthcare providers, by insurance companies in claims processing and offer preparation and by legal service providers in lawsuits related to claims.

**Prescriptions**

Healthcare and pharmacy businesses can automate prescriptions to provide faster services. With prescription automation, doctors can provide standardized prescriptions rapidly, and patients wait less for their prescriptions to be taken and filled, which improves customer satisfaction. In addition, both generation and processing of bank statements, medical records, annual reports and numerous government documents can be automated.

**Financial Services**

**Bank statements**

Automated bank statement creation is important for banks. Extracting such data is also important in cases of legal disputes.
Document automation use cases

Finance

Purchases to pay and order to cash processes involve automatically processing orders and invoices received from customers.

Legal Services

- Automation technology can be used for generating legal documents, such as employment contracts and estate planning documents.
- In large law firms, document automation systems are usually used in tasks like term sheet creation and first-draft generation of credit agreements. These firms also start to provide legal document services on the internet.
- In lawsuits, legal services may need to process documents such as medical records, bank statements, invoices, etc.

Insurance

Document creation

Insurance policy documents usually consist of hundreds of pages and include specific information on the insured. In the past, these documents were created by one of the following:
- Typing out free-form letters
- Adding pre-printed brochures
- Editing templates
- Customizing graphics with the required information

While these manual actions consume time and are prone to errors, document automation can generate policy statements without mistakes.

Document processing

Insurance companies need to various documents in their claims processing such as:
- medical records
- invoices for real estate or vehicle-related expenses

Logistics

Logistics teams use a variety of documents to perform their tasks. While they need to handle these documents, automating them will help them to reduce their errors, speed up documentation processes, and keep all historical transactions in digital systems. Using document automation also helps these teams to standardize different documents in a company. Here is a shortlist of documents that logistics teams use:
- Invoice
● Packing list
● Content list
● Pick tickets
● Arrival forms
● Delivery forms
● Bill of lading
● Customer contracts
Document Automation Use Case Deep-Dive: AP Automation

Thanks to machine learning and the document data extraction, validation and processing technologies it enables, ~80% no touch AP automation is possible for invoices submitted outside of the company’s Electronic Data Interchange (EDI). Additionally, companies should push for EDI adoption to further increase no touch automation rate.

By adopting these technologies, companies can dramatically reduce manual document processing. Therefore they can reduce costs and errors while increasing compliance and employee satisfaction. According to our interviews with project managers from the Big 4 and solution providers in the space, an average Fortune 500 processes a few millions of documents manually per year and adopting the latest automation technologies can result in savings of hundreds of millions of dollars per year.

Accounts Payable Process

Accounts payable (AP) process includes receiving, processing, and paying out invoices from suppliers that provided goods or services to the company. In accounting, such transactions are written under accounts payable account, until the payment is made. An AP department is responsible for

- keeping track of transactions. For example, invoices need to be stored for ~10 years in some EU jurisdictions like Germany
- making payments on time
- ensuring payments are compliant with company policies and relevant laws and regulations (e.g., not making payments to Specially Designated Nationals And Blocked Persons List – SDN)
- ensuring that payments are correctly accounted for. Company’s General Ledger (GL) includes all transactions along with the accounts those transactions belong to. For example, classifying an operating expense as a capital expense would have implications in both taxations as well company’s bottom line results.

Steps that can be automated in AP process

Almost all accounts payable process steps can be automated. Here is a step-by-step summary of an AP process for invoices received outside the company’s Electronic Data Interchange (EDI). We focused on this because this process is much simpler when structured data is received through the EDI.

Manage vendor data
Even before invoices arrive, most companies expect procurement teams to create master data records for suppliers to ensure that accounts payable team is aware of whom they should make payments to.

**Receive the invoice**

When a purchase is made, the supplier needs to prepare an invoice. An invoice needs to include

- sender and sender’s detail such as VAT ID and address
- recipient and its address
- the items purchased along with prices and VAT rates

Additionally, it can also include details such as payment terms, the purchase order, original offer etc. Recipients store invoices to keep track of expenses and for VAT returns.

The received invoices need to be scanned and sorted in order. They are also archived in the company’s database in case the related transaction details are required in the future.

**Capture the data stored in the invoice**

Most of the enterprise invoices are sent through Electronic Data Interchange (EDI) systems. However, large companies still end up with millions of invoices sent mostly through email in the form of pdf or image attachments. These tend to be from smaller suppliers or suppliers that rarely work with that company. The data in these invoices needed to be manually captured in the past. Since the 90s, OCR solutions were able to provide a text output for images which facilitated manual capturing. However, clerks still needed to match the text to the fields they were looking for in the document. Now invoice capture solutions can achieve ~80% no touch automation rates, providing structured data as output.

In our interview, Hypatos team shared that since manual data capture is expensive, companies tend to capture just a few fields from each document to enable the payment. This results in limited automation in downstream processes. For example, with more data captured from a document, the account of the invoice can be estimated with higher accuracy, will be the to assign invoices to accounts, since they are necessary, for example to identify the account an invoice belongs to.

**Validate invoice**
Companies have various compliance processes to minimize fraud and other compliance issues. For example,

- invoice needs to include critical data fields such as supplier details etc. as mentioned above
- For purchases of physical goods, invoices need to be 3-way matched. This means that invoice will be matched against the original Purchase Order (PO) and Good Received (GR) document. If this match fails, the company can not be sure that the invoice belongs to a purchase of the company that the company has received. In case a match does not happen, which frequently takes place, this is fixed in Goods Received Invoice Received Clearing (GRIRC). Reasons for matches failing include multiple good deliveries corresponding to a single invoice or multiple invoices corresponding to a single good delivery.
- Non-physical purchases such as services like consulting need to be 2-way matched with the Invoice Received (IR) matched against the original Purchase Order (PO).
- payments beyond a specified amount need to be verified by the department
- payment should be internally consistent and in line with the applicable laws and regulations like sanctions or VAT. For example, companies can be fined up to a few percentage points of their revenues if they fail to comply with VAT regulations in the EU

Validation is crucial because problems are far easier to fix early. For example, many EU companies do not perform real-time checking of invoices for VAT compliance. When a compliance issue arises after the payment is made, the supplier is likely to be less motivated and slower to respond. Re-issuing an invoice requires manual effort and companies are much faster to do it before they receive the payment for the invoice.

**Create accounting entry**

Once validations are completed, accountants need to create new ledger entries based on the invoice. General Ledger (GL) entry includes details in the invoice such as the amount as well as XXX bu cümle eksik sitede de eksik XXX

For orders with Purchase Orders (POs), this can be automated with ease as the PO includes the account that made the purchase. However, when the invoice lacks a purchase order, accountants need to assign one to it manually. However, if all data in the invoice is captured, a machine learning model can be built to predict accounts from invoices. **Hypatos** is a solution provider that provides such functionality.

**Clear GR/IR**

The 2-way and 3-way matches explained in the validation phase do not always get completed due to various issues explained above. Then, accounts payable team tries to clear unmatched records periodically by manually analyzing them. Having improved
extraction increases match rate and reduces GR/IR clearing issues that need to be resolved manually.

*Make payments on time*

Businesses need to process all payments before the due date on the invoice. Late payment can result in fees and reduced supplier trust which impacts future procurement.

*Finish period end tasks*

Some IR/GR clearing activities and other accounting related activities need to be delayed until the period end. With increased automation in the previous steps, these issues can be resolved earlier.

**Technologies in AP automation**

AP automation is a developing technology that aims to enhance the accounts payable process by reducing manual processing of repetitive tasks. While automating AP processes, businesses benefit from the broad group of technologies listed below:

- Data management
- Data extraction technologies including
  - document scanning
  - Optical Character Recognition (OCR)
  - machine/deep learning to assign data to specific labels (e.g., supplier address)
- Machine learning to automate tasks like matching invoices to accounts
- Payment processing
- General purpose automation tools like RPA can help automate rules based parts of the process

**Benefits of AP Automation**

Although AP processes seem simple, the increasing number of transactions in businesses raises the complexity and resource requirements of AP teams. By automating this process, companies can reduce cycle times, give employees more time for more intellectually challenging tasks, reduce human errors and increase employee satisfaction.

*Shorter Cycle Times*
Late payments can risk supplier relationships of companies. Thus, it is vital to make payments on time and keep cycle times short. AP automation prevents these late payments and reduces cycle times. Ardent Partners reports that AP automation can reduce the cycle time to 4 days, while the manual process takes 17 days for most companies. They also indicate that this is the main reason why only 4% of businesses pay all of their invoices on time.

**Cost Savings**

By just eliminating manual tasks, AP automation can provide significant cost savings for a company. Besides, it can reduce costs by optimizing vendor portfolios, avoiding duplicate or erroneous payments, and taking advantage of early payment discounts. Aberdeen Group indicates that the payment processing cost per receipt decreases from $11 to $5 by automating AP processes.

**Preventing manual errors**

As human-made invoices are prone to errors, duplicate or incorrect payments can always occur. AP automation can reduce these errors and help companies to maintain this process smoothly.

**Fraud detection**

Manual accounts payable processes have lower visibility because companies mostly operate these processes in paper forms. Without digitalization, it would be harder to follow up AP processes, and it makes these processes more open to fraudulent actions. AP automation might detect fake invoices and reduce the possibility of internal or supplier fraud to protect the company.

**Employee satisfaction**

Nobody wants to spend their work time punching in numbers from a document. Automation enables employees to focus on higher value added tasks.

**How to choose an AP automation solution?**

**High level of automation**
The automation software should increase automation to an acceptable level. A good measure of automation is the no touch processing rate. Leading solutions in the market claim ~80% no touch automation rates.

**Integration capabilities**

AP systems need to be integrated to a company ERP system like SAP. Understanding the company’s experience with system integration helps evaluate the timeline for the integration.

**User-Friendly interface**

As in any solution, having a user-friendly interface is vital for companies. Employees can become familiar with such software faster and use them more appropriately. AP automation solutions are the same. The UI will be used as clerks to fix issues in the extracted data and other exceptions.

**Electronic payments**

According to Moody’s, Electronic payments added $296 billion to GDP in the 70 countries from 2011 to 2015. This number is expected to be higher today. Businesses prefer electronic payment strategies for improved efficiency in payment processes, increased command over their cash flows, and enhanced protection against fraudulent activities. Business Insider states that digitization in transactions can increase productivity by 73% and decrease costs by 81%. Thus, payment solutions should also be considered while evaluating an AP automation approach.

**Top AP automation solutions**

Feel free to use our prioritized, sortable list of the top AP automation solutions based on our benchmarking exercise which compared different AP automation solutions in terms of the automation rate they enable.

The increasing volume of clients and competition is forcing legal departments to provide fast and affordable services. Creating, managing, and reviewing legal documents is labor-intensive. Today’s businesses need to reduce these costs and accelerate document-related processes. Legal document automation handles document-based legal tasks for legal departments and enables them to spend more time on more value-adding activities. It also accelerates legal document generation processes significantly and reduces human-made errors.

How does it work?

Most common legal document automation solutions have a simple process. As legal departments mostly focus on automated legal document generation, the main focus is to save time drafting documents. Thus, the common approach is to collect customer information by sending out a form and automatically putting the data in that form into legal documents. A more modern approach is to retire forms and use data extraction solutions to capture data from existing documents or other data sources, however, this approach is not commonly used yet.

Here is how legal document automation works step by step:

**Getting best practice legal text to minimize client risk**

Solutions like Lawgood provide legal contract text vetted by lawyers that covers common areas to minimize research to draft agreements.

**Setting up legal document templates**

- The legal department first creates templates for different types of documents. These templates will include where the client information will be embedded in the document.
- Some documents might consist of separate statements based on client information. For example, there can be different lines for clients from France and the ones from Belgium. Legal departments should also set these possibilities before starting automated document generation.
Similarly, client information can be used to calculate legal rates and charges, which will be added to the pre-defined part of the legal document.

**Collecting data for document generation**

- When a new client comes, the legal department sends out a form to collect all the relevant information needed to generate legal contracts.
- The data collected will automatically be embedded in the legal document. As the data is kept in the database, it can also be used to create different kinds of documents.
Checking for errors / parts to improve

- As the client information is filled directly by the customer, document automation tools are used to identify mispellings and missing information. They can also scan through the other legal documents of the same client to prevent any contradictions.
- Document automation tools can also look for any errors in the template and offer recommendations in the statement for more optimized content.

Why is it relevant now?

Legal departments traditionally use existing templates while generating documents for their clients. For that, they need to collect relevant information from clients like legal name, address, company number, and put that information into legal contracts manually, which is a time-consuming and error-prone task. Automation technologies can accelerate these processes and prevent any missing or erroneous client information while preparing legal documents. As the process does not
require human intervention, it can save around 70% of document generation time for legal departments.

Today, legal document automation solutions become more critical due to the following reasons:

**Increasing number of transactions leads to the increasing volume of documents**

According to a recent AIIM study, the size of incoming business information will increase four times from 2019 to 2021. The growth of the incoming business will also increase the need for legal services, which would also increase the volume of legal documents generated. While creating these documents manually was already a challenge, creating more will be a harder one. This is likely to further motivate legal departments to implement automated solutions.

**Staff need to focus on higher value-adding activities**

Legal document automation will reduce a significant amount of time for legal departments and help employees work on higher value-adding activities instead of manually adding customer information to legal document templates.

**The increasing importance of economic stability**

Mistakes in legal documents can cause high amounts of unexpected costs and put companies in difficult positions. Considering today’s unstable economic environment, companies need to be more careful, especially in legal activities, to avoid issues due to lack of compliance.

**Interest in legal document automation**

![Google Trends](https://aimultiple.com)

**SOURCE:**

GOOGLE TRENDS
The interest in legal document automation was fluctuating until around 2018, however, we observe an increase in interest. This is not surprising since companies are showing an increased interest in automation solutions in the past few years.

**Different types of legal documents to automate**

Different kinds of legal documents can be generated with legal document automation tools. Once the client information is collected, legal departments can automatically create the following documents for the same client instantly:

- Bills of Sale
- Operating Agreements
- Business Contracts
- Business Proposals
- Financial Declarations
- Loan Agreements
- Mortgages
- Regulatory Agreements
- Non-Disclosure Agreements
- Wills and Trusts
Benefits of legal document automation

The main benefits include:

- **Faster processes:** Document automation significantly speeds up creating new legal documents and provides faster services while interacting with clients.

- **Reduced errors:** While manual document creation is prone to errors, legal document automation enters client information without mistakes and can detect contradictions based on previous deal documents with the client.

- **Optimized contracts:** Template agreements can be too wordy, and specific statements added later might cause documents to be longer. Document automation tools can optimize the content and continue to keep the focus on the key issues to offer secure but shorter, simpler contracts.

- **Improved customer satisfaction:** Handling legal documents faster and with fewer errors would positively impact customer satisfaction.
Legal document automation companies

Many document processing vendors can provide legal document automation solutions. However, some of them are specialized in processing legal documents, so you might want to check them out if you are planning to use this technology for legal purposes. Here is a list of those vendors that provide legal document automation services:

- Knackly
- LawboxPRO
- LawLift
- Leap
- LegalUp
- Radiant Law
Conclusion

Given benefits like higher automation rate and higher levels of compliance, employing document automation should be an easy decision for most large companies.

If you are convinced about the value that document automation will add to your business, the most important next steps are to identify areas where document automation can add the most value and to find the right vendor for your business. Feel free to reach out to us at info@aimultiple.com if you need help in these steps.
Additional resources

- Invoice, the Critical Business Document, Explained
- In-depth Guide to Automating Invoice Processing
- Invoice Capture: Guide to most firms’ first AI purchase

For more information, please contact info@aimultiple.com

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